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Note

Groundwater Rights on Public Land in California

Fifteen million acres of land in California—nearly one-sixth of the state—have been designated as public land.¹ Public land, sometimes called the “public domain,” is land owned by the federal government² which remains open to settlement, sale, or disposition under the public land laws.³ The Interior Department administers this land through the Bureau of Land Management (BLM) under the authority of the Federal Land Policy and Management Act (FLPMA).⁴ Almost all of this land is in the California Desert,⁵ where public uses of the land, such as recreation, livestock grazing, and mining, often depend on the availability of water.⁶ One important source of water in the desert is ground-

1. UNITED STATES DEPARTMENT OF COMMERCE, INVENTORY INFORMATION ON PUBLIC LANDS 10-12 (1970) (prepared for the Public Law Review Comm’n) [hereinafter cited as COMMERCE INVENTORY].

2. Federal land is generally divided into four categories: 1) public land, 2) reserved land, 3) withdrawn land, and 4) acquired land. *See* PUBLIC LAND LAW REVIEW COMM’N, ONE THIRD OF THE NATION’S LAND: A REPORT TO THE PRESIDENT AND TO CONGRESS 19-22 (1970) [hereinafter cited as PLLRC REPORT]. Reserved land is land that is removed from the public domain for federal purposes. *See* Cappaert v. United States, 426 U.S. 128, 138 (1976). Examples of reserved land are Indian reservations, national parks, and military bases. Withdrawn land is land that is removed from the public domain pending ultimate disposition. The terms “withdrawal” and “reservation” are used interchangeably today. C. WHEATLEY, STUDY OF WITHDRAWALS AND RESERVATIONS OF PUBLIC DOMAIN LANDS A-1 (1969) (prepared for the Public Land Law Review Comm’n). Acquired land is land the United States has acquired from private owners by purchase, gift, exchange, or condemnation. PLLRC REPORT, *supra*, at 20. This Note deals solely with issues related to water use on public land and does not address issues related to water use on reserved, withdrawn, or acquired land.

3. Columbia Basin Land Protection Ass’n v. Schlesinger, 643 F.2d 585, 601 (9th Cir. 1981).

4. Federal Land Policy and Management Act of 1976, Pub. L. No. 94-579, § 103(e), 90 Stat. 2744 (codified at 43 U.S.C. § 1702(e) (1982)).

5. The California Desert contains portions of three desert regions: the Mojave, the Sonoran, and the Great Basin. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, CALIFORNIA DESERT CONSERVATION AREA PLAN SUMMARY 3 (1980) [hereinafter cited as CDCA PLAN SUMMARY]. The California Desert Conservation Area, a planning area created under FLPMA, encompasses approximately 12 million of the 15 million acres of public land in California.

6. Groundwater from public land in California is an important part of California’s water supply. *See* C. WHEATLEY, STUDY OF THE DEVELOPMENT, MANAGEMENT, AND USE OF WATER RESOURCES ON PUBLIC LANDS I-3 to I-8 (1969) (prepared for the Public Land

water,⁷ which can be tapped by developing water wells.⁸

Because groundwater supplies in California are limited,⁹ conflicts arise over rights to groundwater use on public land.¹⁰ The laws governing rights to the groundwater, however, are unclear. The BLM and the courts, in resolving disputes between potential groundwater users, must apply both federal and state law. This task is made difficult by uncertainty as to the scope of the various laws and the apparent conflicts between them.

This lack of clear understanding of the laws controlling groundwater extraction also interferes with the BLM's land management objectives of promoting human use of public land¹¹ while preventing the environmental damage associated with groundwater overdraft.¹² The BLM, to achieve its goals, must become aware of the parameters of its regulatory authority.

The purpose of this Note is to explicate groundwater rights on public land in California by analyzing and reconciling the applicable federal and state statutory and common laws. The Note defines the scope of federal and state regulation over groundwater extraction on public land in California, and defines the private rights that may be

Law Review Comm'n). Millions of gallons of groundwater are consumed in public use of the public lands, such as for recreation and livestock grazing. *Id.* at J-11 to J-16.

7. Groundwater is created when rain, melting snow, and other moisture seeps down into the earth through cracks and pores in the soil and rock and eventually reaches a layer of rock beyond which it cannot pass. The water then collects in the porous layers of soil and rock that lie above the impervious layer. Porous layers of soil and rock that hold water in usable quantities are known as aquifers. See V. CHOW, HANDBOOK OF APPLIED HYDROLOGY: A COMPENDIUM OF WATER RESOURCES TECHNOLOGY 4-6 to 4-12 (1964); N. HINDS, GEOMORPHOLOGY: THE EVOLUTION OF A LANDSCAPE 732-33 (1943); R. LINSLEY, M. KOHLER, & J. PAULHUS, HYDROLOGY FOR ENGINEERS 182 (1982) [hereinafter cited as R. LINSLEY].

8. A well traditionally is defined as a "deep, narrow pit dug in the earth, . . . usually walled, for the purpose of obtaining a supply of water." *Andrews v. Cross*, 8 F. 269, 275 (C.C.N.D.N.Y. 1881). Today there are a variety of well designs and construction techniques. See *infra* note 250.

9. See A. SCHNEIDER, GROUNDWATER RIGHTS IN CALIFORNIA: BACKGROUND AND ISSUES (1977) (prepared for Governor's Comm'n to Review California Water Rights Law). "The rate at which groundwater basins are recharged does not keep up with groundwater pumping." *Id.* at 1.

10. See, e.g., *Desert Survivors*, 80 Interior Bd. Land App. 111 (1984). A dispute arose between an outdoor group and a mining company over the use of a groundwater source in the California Desert. The outdoor group claimed that the water source was a public well. The mining company claimed an exclusive right to the water. *Id.*

11. The federal government's policy under FLPMA is to promote human use of public land. 43 U.S.C. § 1701(a)(8) (1982).

12. An overdraft occurs when the pumping rate exceeds the rate at which the basin is being recharged. See A. SCHNEIDER, *supra* note 9, at 1. In *Desert Survivors*, 80 Interior Bd. Land App. at 111, an administrative law judge found a potentially serious adverse environmental impact where extraction from a well in excess of the safe yield could reduce surface water flow down-canyon and thus threaten a rare species of salamander.

acquired. First, the Note describes the federal government's power to reserve certain water wells¹³ on public land without regard to state law and the permitted uses of the reserved water.¹⁴ Second, it summarizes California water law and analyzes its effect upon groundwater extraction on public land.¹⁵ Third, it explores the scope of indirect federal regulation of structures built to extract groundwater and the scope of federal control over the diversion of water across public land.¹⁶ Finally, the Note summarizes guidelines for the BLM, the courts, and others to use in assessing groundwater rights in a particular case.¹⁷

History and Background of Water Rights on Public Land

Management of Public Land

Fifteen million acres of public land in California are owned by the federal government and administered by the BLM.¹⁸ For many years the source of the authority under which the BLM operated was unclear.¹⁹ It derived its management power from over 3000 statutes, sometimes conflicting, which had been enacted over the course of a century.²⁰ After many years of effort and numerous attempts, Congress in 1976 adopted a comprehensive public land management program, FLPMA,²¹ which gave the BLM a simplified and solid basis for managing public land. FLPMA, however, by its terms does not affect water rights on public land,²² which for the most part are defined by other federal and state laws.

Federal Power to Reserve Water Rights

The federal government's power to regulate water use on federal land has three constitutional sources: the commerce clause,²³ the property clause,²⁴ and the supremacy clause.²⁵ Under the commerce clause, the federal government has the power to regulate watercourses that af-

13. See *infra* notes 23-113 & accompanying text.

14. See *infra* notes 114-15 & accompanying text.

15. See *infra* notes 118-239 & accompanying text.

16. See *infra* notes 240-302 & accompanying text.

17. See *infra* notes 303-26 & accompanying text.

18. See *supra* note 1.

19. SENATE COMM. ON ENERGY AND NATURAL RESOURCES, 95TH CONG., 2D SESS., LEGISLATIVE HISTORY OF THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976, at 53 (1978).

20. *Id.*

21. 43 U.S.C. §§ 1701-1782 (1982).

22. See Federal Land Policy and Management Act of 1976, Pub. L. No. 94-579, § 701(g)(1), (2), 90 Stat. 2786.

23. The commerce clause gives Congress the power to "regulate Commerce . . . among the several States." U.S. CONST. art I, § 8, cl. 3.

24. The property clause gives Congress the power to "dispose of and make all needful

fect navigation.²⁶ The property clause grants the federal government power as a landowner to manage or to dispose of its property as it sees fit.²⁷ The supremacy clause affirms the federal government's right to assert its power under the property and commerce clauses without regard to state law.²⁸ Despite its constitutional powers to regulate water use on its land without regard to state law,²⁹ the federal government historically has allowed states to regulate most water use on public land.³⁰

When the federal government reserves land, however, it often expressly or impliedly reserves the water rights necessary to carry out the purposes of the land reservation.³¹ Reserved water rights, though gen-

Rules and Regulations respecting the Territory or other Property belonging to the United States." U.S. CONST. art. IV, § 3, cl. 2.

25. The supremacy clause states that the United States Constitution and laws under it "shall be the supreme Law of the Land." U.S. CONST. art. VI, § 3, cl. 2.

26. *United States v. Rio Grande Dam & Irrigation Co.*, 174 U.S. 690, 703 (1899). The Supreme Court stated that the power of the states to regulate water use "is limited by the superior power of the General Government to secure the uninterrupted navigability of all navigable streams within the limits of the United States."

27. *Arizona v. California*, 373 U.S. 546, 597-98 (1963).

28. *Cappaert v. United States*, 426 U.S. 128, 145 (1976). See also *infra* note 31.

29. 373 U.S. at 598. The Court stated that there is "no doubt about the power of the United States under [the property and commerce] clauses to reserve water rights for its reservations and its property." *Id.*

30. See *infra* notes 118-38 & accompanying text.

31. See Trelease, *Federal Reserved Water Rights Since PLLRC*, 54 DEN. L.J. 473, 475 (1975). The reserved water rights doctrine is also known as the *Winters* doctrine, after *Winters v. United States*, 207 U.S. 565 (1908). In *Winters*, the Supreme Court implied a reserved right to water in a treaty that set aside public land for the Fort Berthold Indian Reservation. The Court reasoned that Congress' intent in establishing the reservation could not be accomplished without sufficient water to irrigate the land. *Id.* at 576.

In *Federal Power Comm'n v. Oregon*, 349 U.S. 435 (1955), the Supreme Court considered whether Oregon could prevent a federal licensee from building a dam on federal land reserved for that purpose. The state, relying on *California Oregon Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142 (1935), as well as its analysis of legislation from the 1800's, argued that Congress had given states the power to regulate water on federal land. The Court rejected the argument on the ground that federal deference to state water law does not apply to reserved land. *Id.* at 448.

In *Arizona v. California*, 373 U.S. 546 (1963), the Court confirmed that reserved water rights might be implied from any federal land reservation. The Court upheld a finding that the federal government intended to reserve water sufficient for the present and future requirements of Lake Mead National Recreation Area, Havasu Lake National Wildlife Refuge, Imperial National Wildlife Refuge, and Gila National Forest. *Id.* at 600-01.

In *Cappaert v. United States*, 426 U.S. 128 (1976), the Court extended the reserved water rights doctrine by finding that the addition of Devil's Hole to Death Valley National Monument also reserved groundwater necessary to maintain the water level in the hole. Devil's Hole is a limestone cavern inhabited by a unique species of pupfish whose ancestors date to the Pleistocene Era. *Id.* at 132. Overdrafting of wells on the Cappaert Ranch was threatening the pupfish with extinction by lowering the level in the hole. *Id.* at 133-34.

The Court found that when Congress added Devil's Hole to Death Valley National

erally associated with reserved land, are relevant to public land because some water sources on public land may be reserved by the federal government.³²

Reservations of Groundwater in Wells on Public Land

Although public land by definition is not reserved land,³³ some water sources on public land are reserved. The most significant reservations were created by the Oil and Gas Well Conversion Act (Well Conversion Act)³⁴ and the Executive Order of April 17, 1926 (Executive Order).³⁵ The Well Conversion Act provided for the reservation of water wells developed incident to oil and gas prospecting.³⁶ The Executive Order established a blanket reservation of springs and water holes.³⁷

Monument, it implicitly reserved unappropriated water necessary to carry out the purposes of the reservation, including preservation of the pupfish. *Id.* at 141. The Cappaerts were thereby restricted in the amount of water they could pump from their wells. *Id.* at 143 n.7.

In *United States v. New Mexico*, 438 U.S. 696, 700 (1978), the Forest Service contended that the reservation of Gila National Forest included instream water flow for recreation, wildlife preservation, and livestock watering. The Supreme Court, however, drew a distinction between the primary and secondary purposes of a federal reservation and held that only the primary purposes provided a basis for reserving water rights. *Id.* at 700-02. Reserved water rights, moreover, were not created unless "without the water the purposes of the reservation would be entirely defeated." *Id.* at 700 (citation omitted).

Because recreation, wildlife preservation, and livestock watering were only secondary purposes of the reservation of Gila National Forest, the Forest Service could acquire water rights only "in the same manner as any other public or private appropriator." *Id.* at 701-02. The Court based its holding in part on the history of federal deference to state water law. *Id.*

32. See *infra* notes 33-113 & accompanying text.

33. See *supra* note 2.

34. Act of Feb. 25, 1920, ch. 85, § 40, 48 Stat. 977 (codified at 30 U.S.C. § 229a (1982)).

35. Exec. Order of April 17, 1926, *reprinted in* 51 Pub. Lands Dec. 457 (1926) (establishing Public Water Reserve No. 107).

36. The Well Conversion Act, prior to amendment by FLPMA, provided in part: All prospecting permits and leases for oil or gas made or issued under the provisions of this chapter shall be subject to the condition that in case the permittee or lessee strikes water while drilling instead of oil or gas, the Secretary of the Interior may, when such water is of such quality and quantity as to be valuable and usable at a reasonable cost for agricultural, domestic or other purposes, purchase the casing in the well at the reasonable value thereof to be fixed under rules and regulations to be prescribed by the Secretary; *Provided*, That the land on which such well is situated shall be reserved as a water hole under section 300 of Title 43.

43 U.S.C. § 229(a) (1970).

37. The Executive Order provides in part:

Under and pursuant to the provisions of the [Pickett] Act . . . , it is hereby ordered that every smallest legal subdivision of the public-land surveys which is vacant unappropriated unreserved public land and contains a spring or water hole, and all land within one quarter of a mile of every spring or water hole located on unsurveyed public land be, and the same is hereby, withdrawn from settlement, location,

Although the Well Conversion Act expressly applies to wells, which are manmade water sources,³⁸ there has been disagreement as to whether the Executive Order also applies to manmade water sources such as wells.³⁹ If the Executive Order does apply, it would provide an additional basis for federal regulation of certain groundwater extraction on public land and would limit the scope of private rights on public land.⁴⁰

Both the Executive Order and the Well Conversion Act were part of an ongoing effort by Congress to develop and preserve water sources on public land.⁴¹ Knowledge of their shared origin and common purpose is fundamental to understanding the scope of their application.

Origins of the Executive Order and Well Conversion Act

The origins of reservations of water sources on public land under the Executive Order and the Well Conversion Act can be traced to the Pickett Act, which was enacted in 1910,⁴² and to the Stock-Raising Homestead Act of 1916.⁴³ The Pickett Act authorized the Executive to withdraw land⁴⁴ for "public purposes."⁴⁵ The scope of the withdrawal authorization was clarified and extended by section 10 of the Stock-Raising Homestead Act of 1916.⁴⁶ Section 10 specifically authorized the Executive to withdraw public land containing water holes or other bodies of water needed or used by the public.⁴⁷

Congress' purpose in authorizing the Executive to reserve water sources was to prevent private monopolization of public land.⁴⁸ Con-

sale, or entry, and reserved for public use in accordance with the provisions of [the Stock-Raising Homestead Act of 1916]. . . .

51 Pub. Lands Dec. 457.

38. See *supra* note 8.

39. See *infra* notes 68-96 & accompanying text.

40. See *infra* notes 114-15 & accompanying text.

41. See *infra* notes 42-51 & accompanying text.

42. Act of June 25, 1910, ch. 421, § 1, 36 Stat. 847 (repealed 1976).

43. Act of Dec. 29, 1916, ch. 9, § 10, 29 Stat. 865 (repealed 1976).

44. See *supra* note 2.

45. See *supra* note 42.

46. Section 10 provided in part:

Lands containing water holes or other bodies of water needed or used by the public for watering purposes . . . may be reserved . . . and such land . . . shall, while so reserved, be kept and held open to the public use for such purposes under such general rules and regulations as the Secretary of the Interior may prescribe

47. *Id.*

48. H.R. REP. NO. 35, 64th Cong., 1st Sess. (1916), provides in part:

This is a new section, and authorizes the Secretary of the Interior to withdraw from entry and hold open for the general use of the public, important water holes, springs, and other bodies of water that are necessary for large surrounding tracts of country; so that a person cannot monopolize or control a large territory by locating as a homestead the only available water supply for stock in that vicinity.

gress sought to prevent an individual from gaining control of a large area by homesteading a parcel of public land that contained the only available water in that area, and thus reserved such water sources for public use.⁴⁹ The withdrawal authorizations of the Pickett Act and the Stock-Raising Homestead Act of 1916 were repealed by FLPMA,⁵⁰ but reservations made under the authority of the two acts before the passage of FLPMA remain in effect.⁵¹

The Executive Order

Under the authority granted by the Pickett Act and the Stock-Raising Homestead Act of 1916, President Coolidge issued an Executive Order on April 17, 1926, withdrawing from settlement, location, sale, and entry any parcel of public land containing a "spring or water hole."⁵² Despite its broad language, the scope of the Executive Order historically has been limited to preventing private monopolization of public land, and thus the Order has been applied only to water sources that provide enough water for use by the general public.⁵³ Water sources that yield only enough water for one family are not covered.⁵⁴ In addition, the present position of the Interior Department is that all the water in a source covered by the Executive Order is not necessarily reserved.⁵⁵ Rather, the Order has been interpreted to reserve only the amount of water necessary for general human and animal consumption.⁵⁶

49. *Id.* See also Federal Water Rights of the National Park Service, Fish and Wildlife Service, Bureau of Reclamation and Bureau of Land Management, 86 Interior Dec. 553, 581 (1979) [hereinafter cited as *Krulitz Opinion*].

50. See Federal Land Policy and Management Act of 1976 (FLPMA), Pub. L. No. 94-579, § 704(a), 90 Stat. 2744.

51. *Id.* § 701(c) (a saving clause).

52. See *supra* notes 35, 37 & accompanying text.

53. Regulations published with the Executive Order provide in part:

The . . . order was designed to preserve for general public use and benefit unreserved public lands containing water holes or other bodies of water needed or used by the public for watering purposes. It is not therefore to be construed as applying to or reserving from homestead or other entry lands having small springs or water holes affording only enough water for the use of one family and its domestic animals. It withdraws those springs and water holes capable of providing enough water for general use for watering purposes.

51 Pub. Lands Dec. 457 (1926).

This limited interpretation of the Executive Order was recently confirmed in Purposes of Executive Order of April 17, 1926, Establishing Public Water Reserve No. 107, 90 Interior Dec. 81 (1983) [hereinafter cited as *Coldiron Opinion*].

54. See *supra* note 53.

55. *Coldiron Opinion*, 90 Interior Dec. at 82-83.

56. *Id.* The *Coldiron Opinion's* narrow interpretation of the Executive Order has been criticized as impractical and inconsistent with the broad purpose of the Order. See Note, *Reevaluating the Applicability of the Reservation Doctrine to Public Water Reserve No. 107*, 26 ARIZ. L. REV. 127 (1984).

Thus, water reserved under the Executive Order remains available for public use. All use, however, is subject to federal regulation, both to protect other resources and to ensure continued public access to the water source.⁵⁷ In no case may a user acquire a legal right to the reserved water.⁵⁸

Well Conversion Act

The Secretary of the Interior, through the BLM, regulates oil and gas prospecting on public land through a permit system.⁵⁹ Frequently, oil and gas prospectors strike water.⁶⁰ Under the terms of prospecting permits issued prior to passage of the Well Conversion Act, oil and gas prospectors were required to plug water wells they inadvertently developed, even if the water could be put to beneficial use.⁶¹

The Well Conversion Act allows the federal government to preserve and to regulate water wells developed by oil and gas prospectors by requiring that when such prospectors strike water, they must offer the well casings to the Secretary of the Interior for their reasonable value.⁶² Under the Act, the Secretary of the Interior may operate the well or lease it to others for the purpose of producing water for use on or off the public land.⁶³ In addition, owners or occupants of land adjacent to the well receive priority to the use of the water.⁶⁴

Before FLPMA was enacted,⁶⁵ all water wells developed by oil and gas prospectors and purchased by the Secretary of the Interior were reserved as water holes under the Executive Order and the Stock-Raising Homestead Act of 1916.⁶⁶ Because the Executive Order and

57. See *Krulitz Opinion*, 86 Interior Dec. at 587-89.

58. *Coldiron Opinion*, 90 Interior Dec. at 82-83.

59. 30 U.S.C. §§ 223-236a (1982).

60. 78 CONG. REC. 11,116 (1934) (statement of Sen. O'Mahoney).

61. *Id.* at 11,117. The Senator cited an incident in Wyoming in which prospectors drilled to a depth of 2,250 feet, failed to strike oil, but struck water at 1,750 feet with a flow of 42,000 gallons per day. *Id.* at 11,116. Under the regulations, the prospectors were liable for the cost of plugging the well, even though the water was suitable for livestock. *Id.* at 11,116-17.

62. 43 U.S.C. § 229a(a) (1982).

63. *Id.* § 229a(c).

64. *Id.*

65. FLPMA repealed the reservation authorization, but reservations made prior to FLPMA remain in effect. See *supra* notes 50-51 & accompanying text.

66. See *supra* note 36, for the text of the relevant portion of the Well Conversion Act prior to amendment by FLPMA. The regulations provided in part:

If the water is found to be valuable and usable at a reasonable cost for any of the purposes specified in the Act, the land subdivision which contains the well will, if subject thereto, be held to be withdrawn by Executive Order of April 17, 1926, and reserved for public use pursuant to [the Stock-Raising Homestead Act] as a water hole.

30 C.F.R. § 241.5 (1938) (superseded).

the legislation that authorized the Order were the authority for reserving water wells under the Well Conversion Act, the Executive Order and the Well Conversion Act serve a common federal purpose, the preservation of water sources on public land.⁶⁷

Water Wells Under the Executive Order

Despite the common purpose of the Well Conversion Act and the Executive Order, administrative decisions conflict on the issue of whether water wells or other man-made water sources not within the scope of the Well Conversion Act can be reserved under the Executive Order. Four Interior Department decisions in the 1930's and a 1979 Solicitor's Opinion⁶⁸ have addressed this issue.⁶⁹

In *Santa Fe Pacific Railroad*,⁷⁰ a reservoir had been constructed for livestock watering.⁷¹ Its sole source of water was runoff collected occasionally from two small canyons.⁷² The issue arose as to whether the reservoir was reserved under the Executive Order.⁷³ The decision stated that the Executive Order did not contemplate the reservation of "mere dry depressions or draws which do not, in their natural condition, furnish or retain a supply of water for public use."⁷⁴

A similar conclusion was reached in the 1938 decision of *A.T. West & Sons*.⁷⁵ This case involved Johnny Creek Spring, a water hole or seep that had been developed and maintained as a livestock watering place by the West family for over fifty years.⁷⁶ Citing *Santa Fe Pacific Railroad*,⁷⁷ the Interior Department decision held that since the water source was developed entirely by the West's own efforts, it was not a water source reserved by the Executive Order.⁷⁸

In *State of New Mexico*,⁷⁹ however, the Department found that the

67. The relationship between the Well Conversion Act and the Executive Order was also discussed in Park Center Water Dist. and the Canon Heights Irrigation and Reservoir Co., 84 Interior Dec. 87, 90 (1977).

68. A Solicitor's Opinion is a legal memorandum, binding on the Interior Department, which addresses only questions of law. See, e.g., *Krulitz Opinion*, 86 Interior Dec. at 583-85.

69. See *infra* notes 70-96 & accompanying text. The Interior Department has an administrative appeals procedure whereby BLM decisions may be appealed. See 43 C.F.R. §§ 4.400-478 (1984).

70. 53 Interior Dec. 210 (1930).

71. *Id.* at 211.

72. *Id.*

73. *Id.*

74. *Id.*

75. 56 Interior Dec. 387 (1938).

76. *Id.* at 388-89.

77. 53 Interior Dec. 210 (1930).

78. 56 Interior Dec. at 389.

79. 55 Interior Dec. 466 (1936).

Executive Order did apply to a particular man-made water source.⁸⁰ This decision involved an artesian well that had been drilled after the date of the Executive Order and that the Department had previously found to be a valuable public watering place.⁸¹ The Department analyzed the Executive Order and the regulations promulgated under it, and found no language restricting the meaning of the phrase "spring or water hole" to water sources created solely by the forces of nature. "[T]he fact that it was developed or brought into being by human agency . . . would not take it out of the letter or spirit of the order."⁸²

The Department also found that the Executive Order provided for continuing withdrawal of any water source of the type described in the order.⁸³ Therefore, the fact that the well was developed after the Executive Order was issued did not remove it from the scope of the order.⁸⁴

*Lee J. Esplin*⁸⁵ involved a reservoir which collected runoff that occasionally flowed down a canyon.⁸⁶ As in *Santa Fe Pacific Railroad*,⁸⁷ no streams, springs, or seeps fed the reservoir.⁸⁸ The Department held that the Executive Order did not apply to the reservoir,⁸⁹ but that the order would attach should the developer abandon the reservoir.⁹⁰

Over forty years later, however, Solicitor Krulitz's opinion⁹¹ decided that the Executive Order reserved only those water sources that came into existence naturally prior to the passage of FLPMA.⁹² The opinion stated that when man-made water sources are abandoned, the federal government as landowner becomes the owner of the water sources and may put the water to beneficial use.⁹³ Although portions of the *Krulitz Opinion* have been criticized⁹⁴ and in part have been superseded,⁹⁵ its ruling on man-made water sources such as wells is still

80. *Id.* at 467.

81. *Id.* at 466-67.

82. *Id.* at 467.

83. *Id.* at 468.

84. *Id.*

85. 56 Interior Dec. 325 (1938).

86. *Id.* at 326-27.

87. 53 Interior Dec. at 210.

88. 56 Interior Dec. at 327.

89. *Id.* at 329.

90. *Id.* at 328. The concept that the water source passes to the United States upon abandonment was also adopted in the *Krulitz Opinion*, 86 Interior Dec. 553 (1979).

91. *Krulitz Opinion*, 86 Interior Dec. 553 (1979).

92. *Id.* at 584 n.45, 587.

93. *Id.* at 585.

94. See, e.g., Simms, *National Water Policy in the Wake of United States v. New Mexico*, 20 NAT. RESOURCES J. 1 (1980) (criticizing the *Krulitz Opinion*'s discussion of "non-reserved" water rights).

95. *Coldiron Opinion*, 90 Interior Dec. at 83 (*Coldiron* modified the portion of the *Krulitz Opinion* that stated that the total flow of water sources on reserved land was also re-

binding authority within the Interior Department.⁹⁶

Toward A Balancing Approach: A Critique of the *Krulitz Opinion*

The *Krulitz Opinion*'s automatic exclusion of man-made water sources from the ambit of the Executive Order is ill-founded. Nothing on the face of the Executive Order, the legislation that authorized the Order, or the regulations promulgated under the Order excludes water wells or other man-made water sources.⁹⁷

Four reasons support a broad interpretation of the Executive Order's withdrawal of land containing a "spring or water hole."⁹⁸ First, the distinction between natural and man-made water sources is not always clear, a fact that the *Krulitz Opinion* ignores. For instance, in its natural condition an aquifer that intersects with the surface may result in only a small spring or seep, or the discharge from a spring may fluctuate seasonally.⁹⁹ Where such a spring or seep has been artificially enlarged, lined, or otherwise altered to increase its flow, to make the supply more constant, or to make the water more accessible to humans or livestock, it may be difficult to classify as either natural or man-made.¹⁰⁰

Second, the Stock-Raising Homestead Act of 1916, which is one of the seminal pieces of legislation in this area and is closely tied to the Executive Order, expressed the broad intent of Congress to preserve important public water sources on public land. This Act authorized the Executive to withdraw land containing "water holes or other bodies of water."¹⁰¹ The phrase "other bodies of water" certainly encompasses man-made water sources, such as wells.

Third, Congress and the Interior Department historically have interpreted the term "water hole" as used in the Executive Order to include water wells. The Well Conversion Act and the regulations promulgated under it specified that if the Secretary of the Interior chose to preserve a water well developed by oil and gas prospectors, the

served. According to *Coldiron*, only water needed for human and animal consumption was reserved).

96. The BLM publishes a manual that includes a section on water rights. See BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR, MANUAL (1984) (Release No. 7-86) [hereinafter cited as BLM MANUAL]. The California BLM office publishes a supplement. CALIFORNIA STATE OFFICE, BUREAU OF LAND MANAGEMENT, MANUAL (1982) (Release No. 7-5) [hereinafter cited as BLM MANUAL (CALIFORNIA)]. The BLM MANUAL states that only natural springs and waterholes were withdrawn by the Executive Order. BLM MANUAL, *supra*, at § 7250.12(A)(2); BLM MANUAL (CALIFORNIA), *supra*, at § 7250.11(3).

97. *State of New Mexico*, 56 Interior Dec. at 467.

98. See *supra* note 37.

99. See R. LINSLEY, *supra* note 7, at 186.

100. Such enlargement of a spring or seep apparently occurred in *A.T. West & Sons*, 56 Interior Dec. at 387.

101. See *supra* note 46.

well would be reserved "as a water hole" under the Executive Order and the legislation that authorized the order.¹⁰² Indeed, *State of New Mexico*, which was decided only ten years after the Executive Order was issued, held that a water well could be a "water hole" subject to the Executive Order.¹⁰³

Finally, and most importantly, Solicitor Krulitz assumed that private control of a man-made water source could not lead to monopolization of a large area of public land.¹⁰⁴ Prevention of such monopolization was the primary objective of the Executive Order. Solicitor Krulitz' assumption, however, is contrary to the hydrology and economics of groundwater extraction.

The hydrological feasibility of well development often depends on how close the aquifer¹⁰⁵ is to the surface.¹⁰⁶ If the aquifer is close to the surface in only one location, control of this location will control the access to the entire aquifer. If the aquifer is the only water available in the area, others whose use of the surrounding land depends upon water could be excluded. Such private monopolization of public land by control of a water source is precisely what the Executive Order and the legislation that authorized the Order sought to prevent.¹⁰⁷

Economic factors may also make a particular water well an important water source. For example, a well may be developed as the primary water source in a desert area when large-scale mining or other commercial activity justifies such an investment. Should this well fall into private control, others, such as recreational visitors or miners whose activity on the land depended on access to water from the well, might be excluded from the surrounding public land unless they could afford to develop new wells.¹⁰⁸

102. See *supra* notes 36, 66.

103. 56 Interior Dec. at 467.

104. See *Krulitz Opinion*, 86 Interior Dec. at 584-85. The opinion stated that the purpose of the Executive Order was "to reserve naturally occurring water sources . . . to prevent monopolization of large tracts of surrounding land by one or a few individuals. It was not intended to reserve lands containing artificial sources . . ." There is a gap in the logic between these two sentences. While it is true that the Executive Order's purpose was to prevent private monopolization of public land, it does not necessarily follow that this precludes the reservation of man-made water sources such as wells.

105. An aquifer is a layer of soil and rock that holds water in usable quantities. See *supra* note 7.

106. The terrain above an aquifer may vary radically. For example, a hill often rises many feet above an aquifer. N. HINDS, *supra* note 7, at 733. A valley often dips close to an aquifer or even intersects with the aquifer, creating a spring or stream. *Id.* See also R. LINSLEY, *supra* note 7, at 176. In addition, geologic processes may fold and distort the layers of rock so that an aquifer is close to the surface in some places and far away in others. A locally confined impervious layer may result in a small aquifer perched high above other aquifers in the area. R. LINSLEY, *supra* note 7, at 176, 187.

107. See *supra* notes 42-51 & accompanying text.

108. Well development could occur, for example, during the "boom" phase of boom and

To prevent such monopolization, any man-made water source, such as a well, that existed prior to the passage of FLPMA¹⁰⁹ should be treated as potentially within the scope of the Order. A determination of whether a particular water source is reserved under the Executive Order should be based on a balancing of the factors relevant to advancing the policy of preventing private control of the water source from leading to monopolization of a large area of public land. Factors of paramount importance include whether the source yields enough water for general purposes and whether other water is available nearby.¹¹⁰

Two other factors that should be considered are the historical use of the water source and the amount of maintenance necessary. If the source historically has been under private control, it is unlikely that the well is an important public water source.¹¹¹ Similarly, if the source historically has been used by the public, attempts to assert private control over it should be blocked unless a showing is made that private control of the source would not monopolize public land.¹¹² Finally, a source that requires a great deal of maintenance to remain usable would not lend itself to public use.¹¹³ A balancing of these factors will help determine whether a well is reserved under the Executive Order.

Once a water well has been found to be reserved under the Well Conversion Act or the Executive Order, the BLM may protect the source from private interference¹¹⁴ and need not consider state law.¹¹⁵

bust mining, described in the CDCA PLAN SUMMARY, *supra* note 5, at 4. When the large mineral deposits have been exhausted, later users of the area may have to rely on improvements made when profit potential justified such investment because well development can be complicated and costly. See *supra* note 250.

109. FLPMA repealed the acts which authorized withdrawals under the Executive Order. See *supra* note 50.

110. Cf. *Coldiron Opinion*, 90 Interior Dec. at 83 (defining reserved sources as those that "provide the water supply for tracts of public domain land larger than the 640 acres allowed to be homesteaded by an individual").

111. See, e.g., A.T. West & Sons, 56 Interior Dec. 387, 387 (1938). The fact that the water source had been under continuous control of the Wests was an important factor in the Interior Department's finding that the water source was not reserved. See *id.* at 389.

112. The Board of Land Appeals recently set aside BLM approval of a mining plan of operations that gave the miner exclusive control of a water source alleged by the appellants to be a water source historically used by backpackers. See *Desert Survivors*, 80 Interior Bd. of Land App. 111 (1984). The Board found that the BLM had not conducted an adequate examination as to the nature of the water source. *Id.* at 116.

113. See, e.g., A.T. West & Sons, 56 Interior Dec. at 389. The source had been continuously maintained by the Wests for over 50 years, a factor that led the Department to conclude that the water source was not reserved. *Id.*

114. See *Cappaert v. United States*, 426 U.S. 128, 141-43 (1976). Groundwater sufficient to carry out the purposes of the reservation is reserved. Thus, private interference, such as pumping from a well on nearby public land, can be regulated. Cf. *id.* at 143 n.7. See also *Park Center Water Dist. and the Canon Heights Irrigation and Reservoir Co.*, 84 Interior Dec. 87, 90-91 (1977) (applying *Cappaert* to the Well Conversion Act).

115. See *Cappaert*, 426 U.S. at 141-43.

However, water wells outside the scope of the Order or the Well Conversion Act are subject to state water law.¹¹⁶ State water law applies even though the federal government has the constitutional power to regulate all water use on all federal land.¹¹⁷ Except for the reservations of water discussed above, the federal government historically has deferred to state regulation of water on public land.

History and Background of State Regulation of Water Use on Public Land

Federal Deference to State Water Law

Federal deference to state regulation of water use on public land dates back to the California Gold Rush, when miners on public land diverted streams from their natural courses and used the water in mining operations.¹¹⁸ In California, the miners determined priority of water rights by a custom of "prior appropriation" or "first in time, first in right."¹¹⁹

Congress passed three acts during the 1800's that validated this custom. The first act, the Mining Act of 1866, allowed free lode mining on public land.¹²⁰ A provision of the Act specifically protected vested rights recognized by state and local statutes, customs, and court decisions regarding water use on public land.¹²¹ In the Act of 1870 Congress amended the Act of 1866 to extend its coverage to placer mining.¹²² This Act validated state and local water use regulation on public land by providing that federal patents¹²³ and homesteads would

116. For instance, other water may be available nearby, so the well would not be reserved. Further, wells developed after the passage of FLPMA are outside the scope of the Order. See *supra* note 50. Such nonreserved water sources are governed by state law.

117. See *supra* notes 25-32 & accompanying text.

118. W. HUTCHINS, WATER RIGHTS IN THE NINETEEN WESTERN STATES 164 (U.S.D.A. Misc. Pub. No. 1206, 1974).

119. W. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 41-43 (1956). The miners also developed similar customs to determine mineral rights on public land. Grow & Stewart, *The Winters Doctrine as Federal Common Law*, 10 NAT. RESOURCES J. 457, 486 n.16 (1980).

120. Act of July 26, 1866, ch. 262, 14 Stat. 253 (codified as amended at 30 U.S.C. § 51, 43 U.S.C. § 661 (1982)).

121. 30 U.S.C. § 51 provides, in part:

Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same.

122. Act of July 9, 1870, ch. 235, 16 Stat. 218 (codified as amended at 30 U.S.C. § 52, 43 U.S.C. § 661 (1982)).

123. A patent is a conveyance by which the United States passes title to parcels of public land. *St. Louis Smelting & Refining Co. v. Kemp*, 104 U.S. 636, 640 (1881).

be subject to vested water rights.¹²⁴

The third act, the Desert Land Act of 1877, allowed persons to homestead public land in western states by irrigating and reclaiming it.¹²⁵ The Act specified, however, that the right to use water for such reclamation would depend upon "bona fide prior appropriation."¹²⁶ Any surplus water was to remain free for appropriation and use by the public "subject to existing rights."¹²⁷

In *California Oregon Power Co. v. Beaver Portland Cement Co.*,¹²⁸ the Supreme Court interpreted the Acts of 1866, 1870, and 1877 to indicate congressional deference to state water law. The dispute in *California Oregon Power* arose when the power company sought to prevent the cement company from interfering with the flow of a river adjoining the power company's land.¹²⁹ The issue was whether a United States patent, the source of the power company's land title, carried with it a common law riparian right assuring continued flow of the river.¹³⁰ Oregon water law did not recognize such a right.¹³¹

The Court found that the Acts of 1866 and 1870 confirmed that the water laws of western states would determine rights in non-navigable water on public land.¹³² The Court further found that the Desert Land Act of 1877 "effected a severance of all waters upon the public domain,

124. 30 U.S.C. § 52 provides: "All patents granted, or homesteads allowed, shall be subject to any vested and accrued water rights, or rights to ditches and reservoirs used in connection with such water rights, as may have been acquired under or recognized by section 51 of this title."

125. Desert Land Act of March 3, 1877, ch. 107, 19 Stat. 377 (codified as amended at 43 U.S.C. § 321 (1982)).

126. 43 U.S.C. § 321 provides in part:

[T]he right to the use of water by the person so conducting the same, on or to any tract of desert land of three hundred and twenty acres shall depend upon bona fide prior appropriation; and such right shall not exceed the amount of water actually appropriated, and necessarily used for the purpose of irrigation and reclamation; and all surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers, and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining, and manufacturing purposes subject to existing rights.

127. *Id.*

128. 295 U.S. 142 (1935).

129. *Id.* at 150-51.

130. *Id.* at 151-52.

131. *Id.* at 152-53.

132. *Id.* at 155.

The effect of these acts is not limited to rights acquired before 1866. They reach into the future as well, and approve and confirm the policy of appropriation for a beneficial use, as recognized by local rules and customs, and the legislation and judicial decisions of the arid-land states, as the test and measure of private rights in and to the non-navigable waters on the public domain.

Id. (citations omitted).

not theretofore appropriated, from the land itself."¹³³ The Court concluded that following the Act of 1877, if not before, non-navigable waters on public land became "publici juris, subject to the plenary control of the designated states."¹³⁴ Thus, the Court held that the United States patent did not carry with it a common law riparian right assuring the continued flow of the river along the power company's land.¹³⁵

The Acts of 1866, 1870, and 1877 established a general rule that water rights on public land must be acquired under state law. As seen previously, an exception to this rule applies when water sources on public land are reserved.¹³⁶ Because the Interior Department narrowly construes such reservations,¹³⁷ the rights to most water sources on public land will be determined by state law.¹³⁸

California Water Law

California recognizes two common law doctrines of water rights: appropriative and riparian. This section briefly explores the two doctrines in the context of their impact on groundwater rights under California law. In addition, because the California Constitution mandates that all water use in the state must be reasonable and beneficial, the "reasonable and beneficial use" limitation is discussed.

Appropriative Rights

In 1855 the California Supreme Court validated the prior appropriation doctrine in *Irwin v. Phillips*.¹³⁹ In *Irwin*, the plaintiff had appropriated water from a stream on public land for use in mining operations some distance away.¹⁴⁰ After the plaintiff had diverted the stream water, the defendant miners established themselves downstream on public land.¹⁴¹ The defendants claimed that they should be entitled to the stream water.¹⁴² The court ruled that between two appropriators, the earlier one holds the better right. To reach its decision, the court validated the miners' custom of "first in time, first in right."¹⁴³

In 1872 the California legislature formally recognized the prior appropriation doctrine by establishing a statutory appropriation proce-

133. *Id.* at 158.

134. *Id.* at 163-64.

135. *Id.* at 165.

136. See *supra* notes 23-115 & accompanying text.

137. See *Coldiron Opinion*, 90 Interior Dec. 81, 82-83 (1983).

138. *Id.*

139. 5 Cal. 140, 146-47 (1855).

140. *Id.* at 145.

141. *Id.*

142. *Id.* at 145-46.

143. *Id.* at 146-47.

ture.¹⁴⁴ The procedure, however, was optional.¹⁴⁵ In 1913 the legislature passed the Water Commission Act to create a more comprehensive system of appropriation.¹⁴⁶ That Act was the basis for the current California Water Code.¹⁴⁷

Under the Water Code, anyone wishing to appropriate surface water must obtain a permit from the State Water Resources Control Board.¹⁴⁸ The Board calculates the quantity of available, unappropriated water.¹⁴⁹ It then decides how much water may be taken and how much must remain in the water source for other beneficial purposes.¹⁵⁰ After the Board grants a permit, the permit holder must promptly divert the water and put it to use, or the right to appropriate will be lost.¹⁵¹

Riparian Rights

Thirty-one years after adopting the prior appropriation doctrine, the California Supreme Court recognized the common law riparian doctrine in *Lux v. Haggin*.¹⁵² In *Lux* the court reasoned that when the California legislature adopted the English common law in 1850, it thereby adopted the common law riparian doctrine.¹⁵³ Thus, the riparian doctrine entered into an uneasy coexistence with the prior appropriation doctrine.¹⁵⁴

Under the common law riparian doctrine, water rights are based on ownership of land that adjoins a pond, lake, or stream.¹⁵⁵ The right to use the water is part and parcel of the land,¹⁵⁶ and is neither created nor destroyed by use or nonuse of the water.¹⁵⁷ Although riparian uses are not subject to California's permit system, courts may limit the ex-

144. W. HUTCHINS, *supra* note 119, at 89.

145. *Id.* at 93.

146. *Id.* at 94.

147. *Id.* at 94-95. See also CAL. WATER CODE §§ 100-4407 (West 1971) (codification of the appropriation procedure).

148. CAL. WATER CODE § 1225 (West 1971). See also W. HUTCHINS, *supra* note 119, at 97-98.

149. See W. HUTCHINS, *supra* note 119, at 101-05; see also CAL. WATER CODE §§ 1253, 1255, 1375 (West 1971).

150. See W. HUTCHINS, *supra* note 119, at 101-05.

151. See *id.* at 108-18 (explaining the "use it or lose it" doctrine); see also CAL. WATER CODE §§ 1395-1397 (West 1971).

152. 69 Cal. 255, 10 P. 674 (1886).

153. *Id.* at 384-87, 10 P. at 749-51.

154. Debate continues as to the relative rights of riparian owners versus appropriators. See D. ANDERSON, RIPARIAN RIGHTS IN CALIFORNIA I (1977) (prepared for Governor's Comm'n to Review California Water Rights).

155. W. HUTCHINS, *supra* note 119, at 52-53.

156. W. HUTCHINS, *supra* note 118, at 26.

157. *Peake v. Harris*, 48 Cal. App. 363, 192 P. 310 (1920).

tent to which the right may be asserted.¹⁵⁸ A landowner shares riparian rights with other owners who adjoin the same water source and has a correlative right to a reasonable share of the water for use on the riparian land.¹⁵⁹

Under California's dual system of appropriative and riparian rights, priority between users is determined by the dates when the users' rights came into existence. An appropriator's right vests on the date of the permit application.¹⁶⁰ A riparian owner's right dates from the time the original owner acquired the land,¹⁶¹ unless the original owner was the state or federal government.¹⁶² Riparian rights attach to public land after it is transferred from the public domain.¹⁶³ Thus, the riparian right of a public land grantee vests as of the date of the grant.¹⁶⁴

Reasonable and Beneficial Use

In 1928 California voters adopted a constitutional amendment¹⁶⁵

158. In an adjudication to determine all the rights to a stream, the exercise of future riparian rights may be severely limited. *See In re Waters of Long Valley Creek Stream Sys.*, 25 Cal. 3d 339, 599 P.2d 656, 158 Cal. Rptr. 350 (1979). Water rights in California can also be lost by prescription. *See W. HUTCHINS, supra* note 119, at 298-343.

159. *Pabst v. Finmand*, 190 Cal. 124, 211 P. 11 (1922). "[T]he 'reasonable' amount to which any one riparian owner is entitled is to be measured by comparison with the needs of the other riparian proprietors." *Id.* at 129, 211 P. at 13.

160. CAL. WATER CODE § 1450 (West 1971).

161. Riparian rights to land received by means of federal patent vest as of the date of settlement with intent to patent. *Pabst v. Finmand*, 190 Cal. at 131, 211 P. at 14. Riparian rights associated with land received by means of Mexican land grants vested upon California's admission to the Union in 1850. *Lux v. Haggis*, 69 Cal. 255, 335, 10 P. 674, 714 (1886). Because riparian rights generally predate appropriative rights, some courts have incorrectly asserted that riparian rights are always superior. *See, e.g., Meridian v. San Francisco*, 13 Cal. 2d 424, 91 P.2d 105 (1939). However, appropriative rights have in some cases been held superior to the riparian rights. *See, e.g., Jones v. Pleasant Valley Canal Co.*, 44 Cal. App. 2d 798, 113 P.2d 289 (1941). In an adjudication as to all rights in a stream, a riparian owner's ability to assert her riparian rights may be limited. *See In re Waters of Long Valley Creek Sys.*, 25 Cal. 3d 339, 599 P.2d 656, 158 Cal. Rptr. 350 (1979).

162. *See McKinley Bros. v. McCauley*, 215 Cal. 229, 1 P.2d 298 (1932).

163. *Id.* *See also* Note, *The Application of California Riparian Water Rights Doctrine to Federal Lands in the Mono Lake Basin*, 34 HASTINGS L.J. 1293 (1983) (arguing that while riparian rights do not attach to the public domain, they do attach when the federal government deeds the land to a private individual or withdraws the land from the public domain and reserves it for federal purposes).

164. *See* Note, *supra* note 163, at 1309.

165. CAL. CONST. art. X, § 2 provides:

It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for public welfare. The right to water

that included a water conservation policy affecting all uses of water in California and providing that all water use in the state be reasonable and beneficial. Although most water uses are beneficial, certain uses may be unreasonable.¹⁶⁶ To determine reasonableness, a court must balance one use of a particular water source against others.

When applying the constitutional mandate, California courts endeavor to arrive at physical solutions to water rights disputes.¹⁶⁷ Such physical solutions are typically water-sharing arrangements between competing users designed to avoid inequities that might occur were the superior right afforded absolute protection.¹⁶⁸ In any dispute between competing water users, a court may require the parties to share the water by imposing a physical solution.¹⁶⁹

Groundwater Rights

California law recognizes two types of groundwater: water flowing in an underground stream, and percolating groundwater.¹⁷⁰ While the hydrological distinction is dubious,¹⁷¹ the legal distinction appears significant. Groundwater flowing in underground streams is subject to California's permit system, while percolating groundwater is not.¹⁷² The legal distinction is diminished in importance, however, by the rule that in the absence of proof to the contrary, groundwater is presumed to be percolating.¹⁷³ Thus, the term "groundwater" as normally used

or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which the owner's land is riparian under reasonable methods of diversion and use or as depriving any appropriator or water to which the appropriator is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained.

166. "It is well established that what is reasonable use of water varies with the facts and circumstances of the particular case." *Long Valley Creek*, 25 Cal 3d at 354, 599 P.2d at 665, 158 Cal. Rptr. at 359. See also *Joslin v. Marin Mun. Water Dist.*, 67 Cal. 2d 132, 139, 429 P.2d 889, 894, 60 Cal. Rptr. 377, 382 (1967).

167. See *City of Lodi v. East Bay Mun. Util. Dist.*, 7 Cal. 2d 316, 60 P.2d 439 (1936).

168. *Id.* at 339.

169. *Id.* See also A. SCHNEIDER, *supra* note 9, at 17.

170. W. HUTCHINS, *supra* note 119, at 419.

171. V. CHOW, *supra* note 7, at 27-29.

172. See CAL. WATER CODE §§ 1200, 2500 (West 1971).

173. See *Los Angeles v. Pomeroy*, 124 Cal. 597, 57 P. 585 (1899). This is the general rule

means percolating groundwater.¹⁷⁴

Under the common law rule, a landowner had absolute ownership of the water beneath the land.¹⁷⁵ These rights were termed "overlying rights."¹⁷⁶ In 1903, however, the California Supreme Court rejected the common law rule in *Katz v. Walkinshaw*.¹⁷⁷ The court held that absolute ownership of groundwater was not suited to California's arid conditions.¹⁷⁸

Instead, the *Katz* court defined overlying rights by analogizing to riparian rights.¹⁷⁹ Both riparian rights and overlying rights are correlative: each overlying landowner has a right to a reasonable share of groundwater.¹⁸⁰ Both are based on ownership of the land and are not created or destroyed by use or nonuse of the water.¹⁸¹

If groundwater is extracted and diverted for use on nonoverlying land, under California law such rights are "appropriative."¹⁸² In the case of groundwater, overlying uses take precedence over appropriative (nonoverlying) uses, regardless of whose right came into existence first.¹⁸³ There are sound reasons for this rule of priority. Overlying use of groundwater, such as irrigation, may help to replenish the aquifer from which the groundwater was extracted.¹⁸⁴ As between two groundwater appropriators, the rule of "first in time, first in right" applies.¹⁸⁵

California has no statutory procedure to regulate groundwater use.¹⁸⁶ Appropriative rights to groundwater are acquired simply by

in most jurisdictions. See, e.g., *McGowan v. United States*, 206 F. Supp. 439, 442 (D. Mont. 1962).

174. See Hutchins, *California Ground Water: Legal Problems*, 45 CALIF. L. REV. 688, 688-89 (1957) (discussing why the distinction is now relatively unimportant).

175. See *Acton v. Blundell*, 152 Eng. Rep. 1223 (Ex. 1843).

176. See A. SCHNEIDER, *supra* note 9, at 7.

177. 141 Cal. 116, 74 P. 766 (1903), *aff'd on rehearing*, 141 Cal. 138, 70 P. 663 (1902).

178. 141 Cal. at 133, 74 P. at 771.

179. 141 Cal. at 143, 70 P. at 666.

180. 141 Cal. at 136, 74 P. at 772 (stating that in "[d]isputes between overlying landowners concerning water for use on the land, to which they have an equal right, in cases where the supply is insufficient for all, are to be settled by giving to each a fair and just proportion").

181. See, e.g., *City of Pasadena v. City of Alhambra*, 33 Cal. 2d 908, 925, 207 P.2d 17, 28 (1949); *Burr v. Maclay Rancho Water Co.*, 160 Cal. 268, 116 P. 715 (1911). However, rights can be lost by prescription. See *Pasadena*, 33 Cal. 2d at 926-27, 207 P.2d at 28-29.

182. *Pasadena*, 33 Cal. 2d at 925, 207 P.2d at 28.

183. *Id.* at 925-26, 207 P.2d at 28-29.

184. The water may seep back through the soil into the aquifer. See *supra* note 7.

185. *Katz*, 141 Cal. at 135, 70 P. at 772.

186. See A. SCHNEIDER, *supra* note 9, at 91-92. In Inyo County, where groundwater extraction by the City of Los Angeles has posed serious environmental threats, the voters enacted a comprehensive groundwater ordinance. See Rossman & Steel, *Forging the New Water Law: Public Regulation of "Proprietary" Groundwater Rights*, 33 HASTINGS L.J. 903 (1982). No appellate court has yet ruled on the several possible constitutional challenges to the ordinance. *Id.*

constructing a well and putting the water to beneficial use.¹⁸⁷ Conflicts over groundwater use are resolved in state court.¹⁸⁸

California recognizes two types of causes of action regarding groundwater use. First, any water user who claims a superior groundwater right may sue to prevent interference with that right.¹⁸⁹ Second, California recognizes broad standing to raise water use issues and permits interested water users, such as environmental groups¹⁹⁰ and the State Water Board,¹⁹¹ to sue to prevent unreasonable groundwater use.¹⁹²

Rights to Groundwater on Public Land Under California Water Law

While California recognizes both overlying and appropriative rights to groundwater on private land, it recognizes only appropriative rights on public land.¹⁹³ Thus, under California law, groundwater rights on public land are based on the use of the water rather than on ownership of the land.¹⁹⁴ Groundwater rights are further influenced by consideration of the strong state and federal policy to protect public use of scarce water resources.¹⁹⁵

Defining Groundwater Rights on Public Land in California: *Ruby E. Huffman*

In the Interior Department case of *Ruby E. Huffman*,¹⁹⁶ the appellants had applied to enter and homestead land in California under the Desert Land Act.¹⁹⁷ The only water available was underground.¹⁹⁸ The appellants intended to develop wells to extract the groundwater.¹⁹⁹ The BLM denied their applications because no "bona fide prior appro-

187. H. ROGERS & A. NICHOLS, WATER FOR CALIFORNIA 359 (1967). The state must be notified, however, of construction of a new well or enlargement or abandonment of an existing well. CAL. WATER CODE §§ 13750-13751 (West 1971).

188. See A. SCHNEIDER, *supra* note 9, at 3.

189. See generally *id.*

190. See *Environmental Defense Fund, Inc. v. East Bay Mun. Util. Dist.*, 26 Cal. 3d 183, 605 P.2d 11 (1980) (a public interest organization was permitted to sue to enjoin allegedly unreasonable use of water by a municipality).

191. CAL. WATER CODE § 275 (West 1971).

192. California law requires that all water use in the state be reasonable. See *supra* notes 166-69 & accompanying text.

193. See *Ruby E. Huffman*, 64 Interior Dec. 57 (1957).

194. See *infra* notes 196-222 & accompanying text.

195. See *infra* notes 223-39 & accompanying text.

196. 64 Interior Dec. 57 (1957).

197. *Id.* at 58. The right of a person to homestead and reclaim land under the Act is called an "entry right." See 43 U.S.C. § 321 (1982).

198. 64 Interior Dec. at 59.

199. *Id.*

priation" of water had been secured as required under the Desert Land Act.²⁰⁰ The BLM based its decision on a Solicitor's Opinion regarding desert land in Arizona.²⁰¹ In the Arizona opinion, the Solicitor had interpreted "bona fide appropriation," as used in the Desert Land Act, to mean a right under state law to a definite, fixed quantity of water that could not be diverted by a subsequent water user.²⁰² Because Arizona's law required that groundwater use be "reasonable," the law was deemed to be flexible rather than definite, and therefore incompatible with the requirements of the Desert Land Act.²⁰³ Desert Land Act applications in Arizona were thus denied.²⁰⁴ In *Huffman*, the BLM reasoned that because California's doctrine of overlying correlative rights also failed to establish rights to a definite quantity of groundwater, it too was incompatible with a requirement of "bona fide prior appropriation."²⁰⁵

The Interior Board of Land Appeals,²⁰⁶ however, reversed the BLM's denial of several desert land applications in California,²⁰⁷ basing its decision on the analogy that California courts had drawn between riparian and overlying rights.²⁰⁸ Under California law, the Board noted, riparian rights do not attach to public land until the land passes into private ownership.²⁰⁹ Uses of water from streams on public land, even uses on land adjacent to the stream, are appropriative.²¹⁰

The Board held that the correlative right of an overlying landowner to groundwater does not attach to public land until the land has passed into private ownership.²¹¹ Thus, all uses of groundwater prior to receipt of the land patent are appropriative.²¹² The Board concluded that the appellants could acquire an appropriative right to groundwater under public land in California, satisfying the Desert Land Act requirements.²¹³

200. *Id.* at 60-61. See also 43 U.S.C. § 321 (1982).

201. 64 Interior Dec. at 60. The BLM followed *Oma B. Davidson*, 63 Interior Dec. 79 (1956). That decision in turn was based on an earlier Solicitor's Opinion, *Validity of Desert Land Applications*, 62 Interior Dec. 49 (1955) (regarding desert land entry in Arizona). See *Oma B. Davidson*, 63 Interior Dec. at 80-81.

202. *Oma B. Davidson*, 63 Interior Dec. at 80.

203. *Desert Land Applications*, 62 Interior Dec. at 53.

204. *Id.* at 54. See also 63 Interior Dec. at 80-81.

205. 64 Interior Dec. at 60.

206. The Interior Board of Land Appeals is the body that currently has jurisdiction over appeals from BLM decisions. See 43 C.F.R. §§ 4.400-478 (1984).

207. 64 Interior Dec. at 70.

208. *Id.* at 66.

209. *Id.* Riparian rights also attach when land is withdrawn from the public domain. See Note, *supra* note 163.

210. 64 Interior Dec. at 66-67.

211. *Id.*

212. *Id.* at 67.

213. *Id.* at 67-70.

The *Huffman* analogy between overlying and riparian rights is well supported by California law.²¹⁴ Thus, it provides a basis for clarifying groundwater rights on public land in California.²¹⁵

Huffman classified groundwater use on overlying public land as "appropriation."²¹⁶ The two traditional categories of California groundwater rights, overlying and appropriative, are inadequate and should be defined more precisely to recognize the right of groundwater appropriation for overlying use on public land.²¹⁷ The resulting categories can be defined as follows: 1) "correlative-overlying," the correlative right of the landowner to utilize groundwater on overlying land;²¹⁸ 2) "appropriative-overlying," the category discussed in *Huffman*, for any overlying use of groundwater on public land;²¹⁹ and 3) "appropriative-nonoverlying," the taking of water for use on non-overlying land, public or private.²²⁰

Under these definitions, all rights to extract groundwater on public land in California are appropriative, based on use of the water rather

214. See *supra* notes 162-64 & accompanying text.

215. Because *Huffman* is a federal administrative decision, it did not alter California law. It does, however, provide a good basis for suggesting ways to define existing California law. Furthermore, it is binding precedent within the Interior Department. No California court has considered groundwater rights on public land.

216. The term "appropriation," as applied to groundwater, traditionally has meant a nonoverlying use. See, e.g., *Katz*, 141 Cal. at 135, 74 P. at 772. However, *Huffman*, 64 Interior Dec. at 67, applied the term "appropriation" to overlying uses of groundwater on public land.

217. The term "overlying" in California groundwater law has been used to refer to a right, a type of use, and a type of land. See A. SCHNEIDER, *supra* note 9, at 7. California decisions have not clearly defined the term. For instance, an overlying use is not always the same as use on overlying land. *Id.* The term "appropriation" in the groundwater context has referred to a right encompassing one type of use: appropriation or taking of groundwater for use on nonoverlying land. *Katz*, 141 Cal. at 135, 74 P.2d at 772.

218. The term does not create a new concept, but rather describes more precisely the groundwater rights of a landowner in California. The right is correlative if the type of use is overlying. See *supra* notes 183-85 & accompanying text.

219. The term describes the category of rights to which *Huffman* alluded. The right is appropriative, which affects the priority between users, see *supra* notes 183-85 & accompanying text, and the type of use is overlying.

California already recognizes some appropriative overlying rights. Uses that are overlying, in the sense that the water is used on land above the aquifer, have been held to be appropriative in cases involving municipalities. In *San Bernadino v. Riverside*, 186 Cal. 7, 198 P. 784 (1921), the plaintiff argued that the pumping of groundwater for use by customers of a municipality overlying the aquifer was an overlying use. The court rejected this argument, holding that since the municipality did not possess the customers' water rights, the municipality's extraction of the water was nonoverlying or "appropriative." *Id.* at 24-25, 198 P. at 791-92.

220. The term does not create a new concept, but rather it more precisely defines appropriation for nonoverlying use, rights that traditionally have been labelled "appropriative." See *supra* notes 182-85 & accompanying text. The right is appropriative, and the use is nonoverlying.

than on ownership of the land. For example, if the federal government extracts groundwater from a converted oil or gas well acquired after FLPMA, it acquires an appropriative-overlying or appropriative-nonoverlying right depending on where the water is used.²²¹ Thus, most conflicts between potential groundwater users can and should be resolved by applying the rule of prior appropriation.²²²

State and Federal Policy Favors Protecting Public Use

While the *Huffman* approach puts all those who use water on public land, including the federal government, on an equal basis under California law, state and federal policy favor public use of scarce water resources. For example, human consumption is considered the highest use of water in California.²²³ In addition, California courts favor physical solutions that result in competing users sharing scarce water resources.²²⁴

However, because the state currently exercises no regulatory power over groundwater use of public land,²²⁵ the federal government should assert its rights under California law to appropriate ground-

221. Wells converted after FLPMA are not reserved. *See supra* note 65. However, the federal government may acquire appropriative rights under applicable state law. *See* Supplement to Solicitor Opinion No. M-36914, 88 Interior Dec. 253, 255 (1981).

222. Determining priorities between the three categories of users requires an analysis of the six possible combinations of conflicts:

1) As between correlative-overlying users, the rule is that each has a correlative right to a reasonable share of the water. This merely restates the traditional rule of priority between "overlying" users. *See, e.g., Katz*, 141 Cal. at 135, 70 P. at 772. This situation will not arise on public land because all groundwater rights on public land are appropriative.

2) As between appropriative-overlying users, the basic rule of prior appropriation applies: first in time, first in right.

3) Similarly, as between appropriative-nonoverlying users, the rule of prior appropriation applies.

4) As between a correlative-overlying user and an appropriative-overlying user, an analogy can be made to the riparian versus appropriator rule of priority. Priority is based on whose right vests first. *Cf. Huffman*, 57 Interior Dec. at 67. Because all groundwater rights on public land are appropriative, this conflict will arise only where an aquifer lies beneath both public and private land.

5) As between a correlative-overlying user and an appropriative-nonoverlying user, the policy favoring overlying use prevails. Thus, the correlative-overlying user always takes precedence. *See City of Pasadena v. City of Alhambra*, 33 Cal. 2d 908, 926, 207 P.2d 17, 28 (1949) (stating that "[p]roper overlying use . . . is paramount, and the right of an appropriator [i.e., a nonoverlying user], being limited to the amount of the surplus, must yield to that of the overlying owner in the event of a shortage")

6) As between an appropriative-overlying user and an appropriative-nonoverlying user, the overlying user takes precedence, because of the policy favoring overlying use.

223. *See* CAL. WATER CODE §§ 106, 1254 (West 1971).

224. *See supra* notes 167-69 & accompanying text.

225. *See supra* notes 186-88 & accompanying text.

water for public use²²⁶ by controlling existing wells when possible and developing new wells when feasible. Historically, federal legislation has consistently promoted a policy of protecting and developing scarce water resources on public land, especially in desert areas. This policy is exemplified by the Pickett Act,²²⁷ the Stock-Raising Homestead Act of 1916,²²⁸ the Executive Order,²²⁹ and the Well Conversion Act.²³⁰ More recently, in FLPMA, Congress again asserted the federal policy of protecting water resources²³¹ and encouraging public use of public land.²³²

In addition, legislation enacted in 1916 (1916 Act) authorized the Secretary of the Interior to discover, develop, and protect, for the benefit of the general public, streams, springs, and water holes on arid public land.²³³ Significantly, though FLPMA repealed many of the public land laws,²³⁴ the 1916 Act is still in effect and specifically applies to groundwater.²³⁵

Congress recognized that travel in arid regions of public land, especially in the desert, can be hazardous.²³⁶ The 1916 Act sought to minimize these hazards by authorizing the Secretary to protect and to develop public water sources.²³⁷ The extent of Congress' concern for protecting public water sources is reflected by the criminal sanctions in the Act for damaging such a source.²³⁸

Thus, both state and federal policy encourages the federal government to assert its rights to appropriate scarce water resources for public use. Indeed, an explicit objective of the BLM water rights program is to acquire the water rights necessary to fulfill public land management purposes.²³⁹ In addition to the government's rights under California law, it possesses considerable authority to regulate indirectly groundwater extraction.

226. The federal government may acquire water rights under state law in the same ways as a private individual. *See* Supplement to Solicitor Opinion M-36914, 88 Interior Dec. 253, 257 (1981).

227. *See supra* notes 42-51 & accompanying text.

228. *Id.*

229. *See supra* notes 52-58 & accompanying text.

230. *See supra* notes 59-67 & accompanying text.

231. 43 U.S.C. § 1701(a)(8) (1982).

232. *Id.*

233. 43 U.S.C. §§ 361-363 (1982).

234. *See* Pub. L. No. 94-579, § 705, 90 Stat. 2786, 2792-93 (1976).

235. 43 U.S.C. § 361 authorizes the Secretary to provide "appliances by which water may be brought to the earth's surface at said water holes." Water below the earth's surface is ground water. *See supra* note 7.

236. *See* S. REP. NO. 9, 64th Cong., 1st Sess (1915); *see also* 53 CONG. REC. 11,699 (1915) (statements of Sen. Raker).

237. *Id.*

238. *See* 43 U.S.C. § 362 (1982).

239. *See* BLM MANUAL, *supra* note 96, at § 7250.02(D).

Indirect Federal Regulation of Groundwater Extraction on Public Land

In addition to its powers to control reserved wells and to appropriate water under state law, the federal government, through the statutes enabling it to regulate the structures associated with groundwater extraction and diversion, has substantial power to regulate indirectly groundwater use on public land.²⁴⁰ This section explores all of the indirect means of controlling groundwater extraction on public land. For example, under the Taylor Grazing Act²⁴¹ the use and development of water wells for livestock grazing is regulated. The development of water wells for mining operations is subject to federal regulation under FLPMA.²⁴² Finally, when groundwater is diverted across public land, the federal government has broad powers to regulate or to prohibit the diversion.²⁴³

Public land has long been used for livestock grazing,²⁴⁴ an activity regulated through a permit system pursuant to the Taylor Grazing Act.²⁴⁵ The Act was intended to provide the BLM with the power necessary to protect water supplies²⁴⁶ and to regulate the development of water holes.²⁴⁷

The Taylor Grazing Act does not affect state water rights law.²⁴⁸ However, it does allow the BLM to regulate water well use and development in two ways. First, the BLM may regulate access to existing water wells on public land used for grazing purposes.²⁴⁹ Second, it may regulate the construction of the shaft and appliances²⁵⁰ necessary for

240. Some statutes and regulations expressly mention water wells. *See, e.g.*, 43 U.S.C. § 315(c) (1982). While other statutes and regulations do not expressly mention water wells, the statutory language implies regulation of these wells.

241. *See infra* notes 244-55 & accompanying text.

242. *See infra* notes 256-83 & accompanying text.

243. *See supra* note 6 & accompanying text.

244. CDCA PLAN SUMMARY, *supra* note 5, at 17.

245. 43 U.S.C. § 315 (1982).

246. *See* 78 CONG. REC. 6347-48 (1934) (statement of Rep. DeRouen).

247. *Id.* at 6348.

248. 43 U.S.C. § 315(b) (1982) provides:

[N]othing in this subchapter shall be construed or administered in any way to diminish or impair any right to the possession and use of water for mining, agriculture, manufacture, or other purposes which has heretofore vested or accrued under existing law validly affecting the public lands or which may be hereafter initiated or acquired and maintained in accordance with such law.

249. *See, e.g.*, 43 U.S.C. § 315(a) (1982).

250. *See* V. CHOW, *supra* note 7, at 13-28. Chow explains that water wells are separated into two categories: shallow wells and deep wells. Shallow wells are generally less than 50 feet deep, and are constructed by digging, driving, or jetting. Dug wells, commonly used for individual domestic supplies, are often constructed by hand. Bored wells are constructed by augers driven by power or by hand. Driven wells are created by driving a series of lengths of pipe into the ground. Jetted wells are constructed by a jet of water directed down into the

developing a water well.²⁵¹

The Act requires that a permit be obtained to develop water wells on grazing land.²⁵² The purpose of the permit system is to assure that any system for providing water²⁵³ is constructed and used consistent with multiple use management.²⁵⁴ The permit must specify design, construction, and maintenance criteria.²⁵⁵ This system thus allows the BLM to regulate well use and development to insure that management goals are met.

Mining, a well-established use of public land,²⁵⁶ often requires water.²⁵⁷ Despite the property interest that mining claimants have in the land under claim and the importance of water to their mining operation, they acquire no water rights under federal law.²⁵⁸

For example, in *Andrus v. Charlestone Stone Products Co.*,²⁵⁹ the BLM attempted to invalidate several mining claims located on public land in Nevada by asserting that no "valuable mineral" had been discovered on the claims as required for valid location under federal law.²⁶⁰ The claimant was using the land for a sand and gravel operation.²⁶¹ Sand and gravel is expressly excluded from the statutory definition of "valuable minerals."²⁶² One of the claims, however, had a well on it which was used in processing the sand and gravel.²⁶³ The Ninth Circuit Court of Appeals held that water in the well constituted a valuable mineral under federal mining law.²⁶⁴ The Supreme Court reversed, holding that water is not a valuable mineral subject to mining claim location.²⁶⁵

The Court, while conceding that water is indeed a mineral in the

earth. Deep wells of high capacity for industrial, irrigation, or municipal use are constructed by drilling. During or after the construction of either deep or shallow wells, the wells are usually lined with casings made of concrete, metal or tile. *Id.*

251. See, e.g., 43 U.S.C. § 315(c) (1982).

252. *Id.*

253. 43 C.F.R. § 4100.0-2 (1983).

254. *Id.* § 4120.6-1(a).

255. *Id.* § 4120.6-4.

256. See CDCA PLAN SUMMARY, *supra* note 5, at 23.

257. See, e.g., *Andrus v. Charlestone Stone Prods. Co.*, 436 U.S. 604 (1978).

258. Title, however, remains in the federal government. *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 335 (1963); *Freese v. United States*, 639 F.2d 754, 755 (Ct. Cl. 1981).

259. 436 U.S. 604 (1978).

260. "Location" is the process by which a claimant acquires a property interest. A claim is not located until a statutorily or judicially designated valuable mineral is found. See *Andrus*, 436 U.S. at 606; see also 30 U.S.C. § 22 (1982).

261. *Andrus*, 436 U.S. at 606.

262. *Id.* See also 30 U.S.C. § 611 (1982).

263. *Andrus*, 436 U.S. at 606.

264. *Charlestone Stone Prods. Co. v. Andrus*, 553 F.2d 1209, 1215-16 (9th Cir. 1977).

265. *Andrus*, 436 U.S. at 610.

broad sense of the word and that it is valuable,²⁶⁶ held that, as used by Congress, the word "mineral" has a narrower meaning.²⁶⁷ The Court reasoned that the Acts of 1866 and 1870 showed that Congress did not consider water to be a locatable mineral.²⁶⁸ The Court concluded that mining claimants must acquire water rights pursuant to state law.²⁶⁹ Thus, a claimant may not circumvent state water law merely by filing a mining claim, but must, under California law, acquire the right to use groundwater on public land by appropriation.²⁷⁰

Mining operations on public land are regulated under FLPMA.²⁷¹ Regulations promulgated under FLPMA divide mining claims into two categories: claims located on land under wilderness review,²⁷² and claims located on other public land.²⁷³ Both sets of regulations apply to the development of water wells on public land in California.

The regulations for mining claims on land under wilderness review²⁷⁴ require that a plan of operations be filed for the construction of any structure on public land,²⁷⁵ including construction of a well by a miner.²⁷⁶ The government may impose terms and conditions on well development, or prohibit development if necessary to prevent impairment of wilderness suitability.²⁷⁷

The regulations for mining claims on other public land require all mine operators within the California Desert Conservation Area²⁷⁸ to submit plans describing their operation,²⁷⁹ including water well development.²⁸⁰ The government may regulate the development to prevent

266. *Id.*

267. *Id.* at 614.

268. *Id.* at 611-14.

269. *Id.* at 615-16.

270. *See supra* notes 196-222 & accompanying text.

271. *See* 43 U.S.C. §§ 1732, 1733, 1781, 1782 (1982).

272. 43 C.F.R. § 3802 (1983).

273. *Id.* § 3809.

274. *Id.* § 3802. An area under wilderness review, a Wilderness Study Area, is defined as a roadless area of 5,000 or more acres of public land that the BLM has found possesses characteristics giving it the potential to be included in the National Wilderness Preservation System. *Id.* § 3802.0-.5(c).

275. *Id.* § 3802.1-.1(e). The plan must describe the nature and location of the well. *Id.* § 3802.1-.4(a)(3).

276. Developing a well often involves constructing a substantial structure. *See supra* note 250.

277. 43 C.F.R. § 3802.1-5 (1983).

278. *Id.* § 3809.1-.4(b)(1). This area includes approximately four-fifths of the public land in California. *See supra* note 5.

279. *Id.* § 3809.1-.5(c)(4).

280. The term "operations" includes as all work, facilities and functions in connection with mining and all uses incident thereto. *Id.* § 3809.0-.5(f). Well development falls within this broad definition.

“unnecessary and undue degradation” of the affected land.²⁸¹

The Surface Management and Multiple Use Act of 1955²⁸² allows public access to surface resources on mining claims located after 1955.²⁸³ Thus, the federal government may also ensure public access to an existing well on a mining claim located after 1955.

The final area of indirect federal power over groundwater extraction on public land is the BLM's regulatory power over water diversion. The federal government has long asserted its power to regulate the diversion of water across public land.²⁸⁴ For example, in *Underground Water Claims, Utah*,²⁸⁵ the Interior Department considered water rights associated with wells on public land that was to be used for livestock grazing.²⁸⁶ It concluded that “the right to appropriate water does not necessarily carry with it a right of way over land for the use of such water.”²⁸⁷ Thus, the Department concluded that the government could protect the use of wells on public land for governmental purposes by refusing to grant rights of way for diversion of water.²⁸⁸

A more recent case illustrates how the BLM has exercised its regulatory power over rights of way. In *Scott Hampson*,²⁸⁹ the appellant had applied for a right of way permit to run a pipe from springs on public land to his private land.²⁹⁰ Because of water shortages on the public land and the use of the springs by wildlife, the BLM denied his application, a decision that was affirmed by the Interior Board of Land Appeals.²⁹¹

FLPMA consolidated and revised many of the statutes concerning rights of way.²⁹² It allows the BLM to regulate the granting of rights of way for canals, ditches, pipelines, and other structures that store, transport and distribute water.²⁹³ Thus, every type of groundwater diver-

281. *Id.* § 3809.1-6. “Unnecessary or undue degradation” is defined as greater surface disturbance than is required for customary, proficient operations. *Id.* § 3809.0-3(k).

282. 30 U.S.C. §§ 611-612 (1982).

283. The leading case is *United States v. Curtis-Nevada Mines*, 611 F.2d 1277 (9th Cir. 1980). A mining company attempted to block public access to claims in California and Nevada. *Id.* at 1279. The court held that the purpose of the Act was to permit multiple use of the land, *id.* at 1280, and that access to water for recreational purposes was protected under the Act, *id.* at 1283. Although the Act does not affect rights to water, 30 U.S.C. § 612 (1982), it does allow access to water.

284. *See, e.g.*, Act of March 3, 1891, ch. 561, 26 Stat. 1095 (repealed 1976).

285. 55 Interior Dec. 378 (1935).

286. *Id.* at 379.

287. *Id.*

288. *Id.* at 380.

289. 18 Interior Bd. Land App. 203 (1974).

290. *Id.*

291. *Id.*

292. 43 U.S.C. §§ 1761-1771 (1982). *See also* 43 C.F.R. §§ 2800.0-1 to 2807.1-2 (1983) (right of way regulations).

293. 43 U.S.C. § 1761(a) (1982).

sion across public land is subject to federal regulation.

In reviewing right of way applications, the BLM must consider the effects of the diversion.²⁹⁴ When granting a permit, the BLM must include terms and conditions to fulfill goals of multiple use management of public land, minimize damage to scenic and aesthetic values, protect fish and wildlife, and otherwise protect the interests of both the federal government and the public.²⁹⁵

Similar conditions should be imposed in rights of way granted under earlier acts. In *Grindstone Butte Project v. Kleppe*,²⁹⁶ the BLM granted rights of way for a canal and pipelines under a pre-FLPMA act.²⁹⁷ The rights of way included terms and conditions for purposes such as protecting water sources, fish and archeological sites.²⁹⁸ Grindstone challenged the BLM's authority to impose such conditions.²⁹⁹ The Ninth Circuit Court of Appeals held that the pre-FLPMA acts and the provisions of the National Environmental Preservation Act³⁰⁰ mandated that the BLM impose conditions to protect the environment.³⁰¹

Rights of way granted after FLPMA are subject to similar conditions.³⁰² All rights of way must be regulated by the BLM so as to protect the environment. Diversion of groundwater across public land is thus subject to strict regulation by the BLM.

Summary of Groundwater Rights on Public Land

The summary set forth below provides a comprehensive yet simple tool for assessing groundwater rights on public land in California.³⁰³

I. Existing Wells

A. Wells Developed Prior to FLPMA.

1. Converted oil or gas wells:³⁰⁴ All water in the wells is reserved by the federal government and managed by

294. *Id.* § 1765. See, e.g., *Desert Survivors*, 80 Interior Bd. Land App. 111, 118 (1984) (Burski, J., concurring). The BLM erred in failing to consider the effects of diversion of water by a miner from a groundwater source on public land.

295. 43 U.S.C. § 1765 (1982).

296. 638 F.2d 100 (9th Cir. 1981).

297. *Id.* at 101.

298. *Id.*

299. *Id.*

300. 42 U.S.C. §§ 4331(b), 4332 (1982).

301. *Grindstone*, 638 F.2d at 103.

302. *Id.* Rights of way granted before FLPMA are not subject to that Act, however. *Id.* at 101 n.2.

303. Unless indicated otherwise, this summary is consistent with the BLM MANUAL, see *supra* note 96, and with federal and state laws. A form entitled "Notification of Proposed Water Use on Public Land" must be filed with the BLM as part of any proposal for private use of groundwater from public land. BLM MANUAL (CALIFORNIA), *supra* note 96, at § 7250.21.

304. See *supra* notes 35-36 & accompanying text.

the BLM.³⁰⁵ Owners or occupants of adjacent land have priority to purchase the water.³⁰⁶

2. Other wells:

- (a) Water needed for human and animal consumption is reserved under the Executive Order by the federal government and managed by the BLM if private control of the wells could lead to monopolization of public land.³⁰⁷
- (b) Water from wells not covered by the Executive Order³⁰⁸ is regulated by California law (see IV), but federal policy favors the BLM's control to protect public access and use.³⁰⁹

B. Wells Developed After FLPMA.

- 1. Converted oil or gas wells:³¹⁰ California law applies (see IV).³¹¹ Because the BLM controls the wells, the federal government has an appropriative right under California law to the water used.³¹² Owners of adjacent land have priority to purchase the water.³¹³
- 2. Other wells: California law applies³¹⁴ (see IV), but federal policy favors BLM protection of public access and use.³¹⁵

II. Proposed Wells

- A. All wells: California law applies³¹⁶ (see IV).
- B. For grazing: Construction of the wells is regulated by the BLM under the Taylor Grazing Act.³¹⁷
- C. For mining: Construction of the wells is regulated by the

305. See *supra* notes 59-67 & accompanying text.

306. See *supra* note 64 & accompanying text.

307. There is authority within the Interior Department that holds the Executive Order did not reserve man-made water sources such as wells. See *supra* notes 92-96 & accompanying text. This Note suggests that whether a pre-FLPMA well is reserved depends upon a balancing of factors relevant to whether private control of the water source could lead to monopolization of public land. See *supra* notes 97-117 & accompanying text. Under current authority, however, a man-made water source such as a well would pass to the United States if abandoned by the developer or the developer's successor in interest. See *supra* note 93 & accompanying text.

308. See *supra* note 116 & accompanying text.

309. See *supra* notes 223-39 & accompanying text.

310. See *supra* notes 35-36 & accompanying text.

311. See *supra* note 221 & accompanying text.

312. *Id.*

313. See *supra* note 64 & accompanying text.

314. See *supra* note 116-17 & accompanying text.

315. See *supra* notes 223-39 & accompanying text.

316. See *supra* note 116-17 & accompanying text.

317. See *supra* notes 244-55 & accompanying text.

BLM under FLPMA.³¹⁸

III. Diversion of Water Across Public Land

- A. Right of Way Permit: A permit from the BLM is required for all facilities used to divert water across public land.³¹⁹
- B. Regulation: Both pre-FLPMA and post-FLPMA rights of way must be regulated by the BLM to protect the environment.³²⁰

IV. California Law

- A. Rule of priority: Most groundwater rights on public land are based on prior appropriation: first in time, first in right.³²¹ The state has no formal appropriation procedure.³²² The State Water Board must be notified, however, of new well construction or enlargement of an existing well.³²³
- B. California policy: Scarce water resources should be shared whenever possible.³²⁴ Human consumption is the preferred use.³²⁵ All water use must be reasonable in relation to other needs for the water and must be beneficial.³²⁶

Conclusion

Much of California is desert land that is owned by the federal government and managed by the BLM for public uses such as recreation, livestock grazing, and mining.³²⁷ Public use of this vast area of desert can be difficult, even hazardous, without a source of water.³²⁸ Groundwater often provides the needed water source.³²⁹

However, the numerous federal and state laws affecting groundwater rights are difficult to reconcile. The groundwater in some wells may be reserved and regulated by the federal government,³³⁰ while the groundwater in other wells may be subject to state law.³³¹ In addition, numerous federal laws affect the rights to construct wells on public

318. *See supra* notes 257-84 & accompanying text.

319. *See supra* notes 292-93 & accompanying text.

320. *See supra* notes 294-302 & accompanying text.

321. *See supra* notes 196-222 & accompanying text.

322. *See supra* notes 186-87 & accompanying text.

323. *See supra* note 187.

324. *See supra* notes 223-24 & accompanying text.

325. *Id.*

326. *See supra* notes 165-69 & accompanying text.

327. *See supra* notes 1-22 & accompanying text.

328. *See supra* note 236 & accompanying text.

329. *See supra* note 6 & accompanying text.

330. *See supra* notes 23-117 & accompanying text.

331. *See supra* notes 118-222 & accompanying text.

land³³² and to divert groundwater across public land.³³³ This Note has analyzed the relationship between the various laws and fashioned a concise summary for assessing the rights in a particular case.³³⁴

Because California does not regulate groundwater extraction on public land,³³⁵ the BLM must fill this role. The BLM should encourage the development of groundwater resources to facilitate public use of the public land and to protect public use of existing wells.³³⁶ At the same time, the BLM should carefully manage scarce groundwater resources to prevent environmental damage.³³⁷ Fortunately, there is ample basis under federal and state law for the BLM to continue in its historical role of developing and protecting groundwater resources on public land.³³⁸

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332. *See supra* notes 240-84 & accompanying text.

333. *See supra* notes 285-302 & accompanying text.

334. *See supra* notes 303-26 & accompanying text.

335. *See supra* notes 186-87 & accompanying text.

336. *See supra* notes 223-39 & accompanying text.

337. *Id.*

338. *Id.*

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